

SOME NEW CULICIDÆ FROM WESTERN AUSTRALIA, SOUTH QUEENSLAND, AND TASMANIA.

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NEW SPECIES FOUND IN A SMALL COLLECTION OF MOSQUITOES FROM WESTERN AUSTRALIA.

THIS collection, which was made by Dr. Cleland, of the Department of Public Health, Perth, Western Australia, was sent to Mr. F. V. Theobald.

All the twenty-two specimens sent were found to belong to the sub-family Culicinae, and at least seven of them represented species up to the present undescribed.

Some of the specimens arrived in too damaged a condition to be identified.

The new species, comprising three *Culicelsa* and one *Grahamia*, are described in detail below, together with notes on their habits, &c., made by Dr. Cleland.

Type specimens of the species have been forwarded to the British Museum.

Culicelsa westralis, n. sp.

Thorax clothed with golden brown scales with three longitudinal lines of white scales. There is also a patch of white scales before the similarly clothed scutellum. Abdomen black with snowy white basal bands.

Legs with black tarsi which have conspicuous snowy white basal bands. Femora and tibiæ pale scaled ventrally.

♀. Head black with large creamy narrow curved scales round the median line and back of head, and smaller narrow curved scales at the sides and round the eyes. The lateral flat scales are for the greater part white, but there is a deep purple band at the sides of the head. The upright forked scales are black. Eyes, silvery. Antennæ with basal segment dark and bearing a few white flat scales and black hairs. Palpi with black and white mottled scales, which are mostly white at the apex. Proboscis not mottled.

Thorax brown with three narrow longitudinal black lines, clothed on the apical two-thirds with golden brown narrow curved scales, which become larger and whiter on the basal third. There are also three indistinct lines of white scales stretching along the black lines of the thorax from the white patch, the median of which almost reaches the head, whereas the lateral lines terminate a little beyond the centre of the thorax in two more or less distinct white spots. Scutellum clothed with white narrow curved scales. Prothoracic lobes with small white narrow curved scales and black bristles. Pleuræ with white flat scales. Abdomen black with well-defined white basal bands on all segments. A slight apical banding also is present on the two apical segments. Ventral surface with white scales except for a small dark central spot on each segment.

Legs with very distinct white basal bands, femora with a slight

apical band also, they are mottled with black and white scales all over. Femora, tibiæ, and metatarsi mostly white scaled below. Tarsi deep black all over except for the white basal bands.

Wings rather densely scaled with black scales. First fork cell considerably longer and narrower than the second fork cell, its stem somewhat over half the length of the cell. Supernumerary and mid cross-veins in a line with each other, posterior cross-vein about its own length distant from the mid cross-vein. Halteres with light stems and dark knobs which bear small white scales.

Length 5-6.5 mm.

Hab. Western Australia.

Observations.—Described from three females.

Of two of the specimens identified as belonging to this species Dr. Cleland says:—"King's Park, Perth, and in closet, Perth . . . Vicious. Bites by day and all the year round." Specimen taken September 23th, 1906, and of the third, referring to the larvæ from which the specimen was hatched:—"Overflow from Port River, Adelaide, clear but still water. Salt, though perhaps not quite as salt as the sea. Enormous numbers of larvæ, especially in the shade. Most remained about four inches under water, occasionally coming up to surface. There seemed to be a stratum at this layer as various things floated there. Pupæ appeared January 29th, 1906; nymphs, January 31st, 1906."

The species is allied to *Culicelsa alboannulatus*, Macquart, but can be at once distinguished from it by the absence of a white ring near the apex of the femora.

Culicelsa uniformis, n. sp.

Thorax uniformly clothed with golden brown scales, except just before the scutellum where they are paler. Scutellum with creamy scales. Abdomen black with light ochreous basal bands. Tarsi black with snowy white basal bands.

♀. Head black with creamy narrow curved scales at the back, more golden brown in front. The upright forked scales are black. The flat scales are black and white in patches. Palpi dark scaled with a few white scales and hairs at the apex.

Thorax black with uniform golden brown narrow curved scales, except before the scutellum where they are of a lighter colour. Scutellum with creamy narrow curved scales. Prothoracic lobes with ochreous narrow curved scales, spindle-shaped scales and bristles. Pleuræ with ochreous and white scales. Abdomen basally banded with light ochreous scales. Apical segment mottled and apically banded, the basal band is absent. The next segment is both apically and basally banded. Ventral surface creamy scaled. Femora mottled, ochreous and dark, knee spot ochreous. Tibiæ unbanded. Tarsi with sharply defined white basal bands. First and second legs with last two tarsi unbanded. Hind legs with all tarsi banded.

Wings not very densely scaled. First fork cell longer and

narrower than the second posterior cell, its stem over half the length of the cell. Supernumerary cross-vein slightly nearer the base of the wing than the mid cross-vein. Hind cross-vein slightly more than its own length distant from the mid cross-vein. Halteres with ochreous stems and knobs, the latter bearing ochreous scales.

Length 4.5–5 mm.

Observations.—Described from two somewhat damaged females. It is closely related to *Culicelsa uestralis*, n. sp., but the uniform thorax separates it from this species. It also comes near *Culicelsa togoi*, Theobald, but has ochreous banding on the abdomen, whereas the latter has snowy white bands.

Dr. Cleland's notes on this species are:—(1) "King's Park, Perth, and in closet, Perth. Vicious. Bites by day and all the year round." (2) "Port River swamps, Adelaide. Bites severely, raising weals even in strong sunlight in the open and with a moderate breeze."

The *dates of capture* were March 28th, 1907, and January 26th, 1906, respectively.

Culicelsa similis, n. sp.

Thorax uniformly clothed with golden brown scales, except just before the scutellum where they are paler. Scutellum with ochreous scales. Abdominal bands white laterally, and ochreous on median area. Tarsal bands snowy white.

♀. Head black with creamy narrow curved scales, black upright forked scales, and flat scales in black and white patches. Palpi rather long, black with white apical scales, and a few white scales at the juncture of the second and third segments. Proboscis long.

Thorax black, clothed with uniform golden brown scales, which become paler before the scutellum. Scutellum with ochreous narrow curved scales. Pleuræ and prothoracic lobes with ochreous scales. Abdomen basally banded, bands white laterally but ochreous on median area. Apical segments not mottled, and without apical banding. Femora not mottled, dark scaled above, pale scaled below on basal half. Knee spot ochreous. Tarsi with well-defined white bands on most joints. Fore legs with three apical tarsi unbanded. Mid legs with two apical tarsi unbanded, and hind legs with apical tarsus unbanded. First fork cell longer and distinctly narrower than the second posterior, its stem not over half the length of the cell. Hind cross-vein almost one and a half times its own length distant from the mid cross-vein. Halteres with almost white stems, knobs blackish with white scales.

Length 4.5–5 mm.

Observations.—Described from a single perfect female. This is evidently very closely related to *Culicelsa uniformis*, n. sp., but can easily be separated by possessing white lateral scales to the abdominal bands. The halteres also are quite distinctive.

"Mt. Lofty, South Australia, January 9th, 1906. Caught in day by disturbing bushes, &c., near stationary pool of water. Bite severely."

Grabhamia australis, n. sp.

This is a large, clumsily built species. Thorax densely clothed with rich brown scales. Scutellum with white scales. Abdomen dark scaled basally, lighter apically with indistinct narrow basal bands. Legs with tarsi unbanded. Wing scales mottled.

♀. Head densely scaled, and with a few long bristles. The curved scales are large and white in colour, except at the borders of the eyes where they are smaller and of a deep golden brown. The upright forked scales are numerous and all black. The flat scales at the sides of the head are mostly white, though a part of their area is covered with purplish dark scales. The eyes are mainly silvery but have large dark black irregular patches. Clypeus shiny black. Palpi densely clothed with dark scales, and a few outstanding bristles. Proboscis covered with mixed dark and white scales, giving it a mottled appearance. The basal joint of the antennæ is clothed with small dark hair-like bristles and a few small narrow flat white scales. Mesonotum dark brown thickly clothed with deep golden brown narrow curved scales, which are larger and of a white colour just before the scutellum. Three rows of bristles are also present, the central one of which is somewhat irregular. Scutellum with large white narrow curved scales and a few long bristles on the lateral lobes. Prothoracic lobes with white curved and hair-like scales. Pleuræ plentifully covered with white flat scales. Abdomen mainly covered with dark flat scales of a violaceous reflection,



Portion of wing of *Grabhamia australis*, n. sp.

which become lighter in colour on the apical segments. First segment with a few whitish scattered scales. Small white lateral apical spots on the second segment, and a pale indistinct apical band consisting of a single row of scales is first noticed on the third segment. It becomes more pronounced on the succeeding segments, except on apical where it becomes merged into the general pale coloured scales covering the whole segment. The lateral spots also become more distinct on the third and succeeding segments. The ventral surface of the abdomen is almost entirely covered with white scales.

Wings large, longer than the abdomen; veins, except at the apex where the scales are culex-like, clothed with mixed dark and white *Tæniorhynchus*-like scales. The dark scales which are brown in colour with a purplish reflection are the most numerous. The first submarginal cell is slightly narrower though somewhat longer than

the second posterior cell, its stem is not half the length of the cell. Posterior cross-vein about its own length from the mid cross-vein.

Legs with femora, tibiae, and metatarsi mottled with brown and white scales. The apices of all the femora are white. White incomplete basal bands are just visible on one or two of the tarsal joints, particularly the second posterior tarsi, but appear to be absent as a general rule.

Length 7.5 mm.

Observations.—Described from a single female. It is a very marked, large, rather clumsily built species.

Locality and date of capture.—"Serpentine, Darling Range, near Perth, W. A., October 21st, 1906."

Note.—This species is placed in *Grabhamia* on squamous characters only, though it appears to be a much larger and more solidly built species than any so far described in that genus. As only one specimen was received, structural characters by dissection could not be made out.

(To be continued.)

NEMOURA DUBITANS, MORTON, A SPECIES OF PLECOPTERA NEW TO THE BRITISH FAUNA.

BY KENNETH J. MORTON, F.E.S.

THE list of British Neuroptera, even when the term is used in its most comprehensive sense, is comparatively so short that any addition to it is a matter of considerable interest. It was therefore satisfactory to find in a small collection sent by Lt.-Colonel C. G. Nurse for determination a male example of *Nemoura* that seemed to be different from any of our known British species. Permission having been obtained to detach the abdomen for more thorough study, I am now able to determine the insect with certainty as *Nemoura dubitans*.

The specimen was taken at West Stow, Suffolk, on April 11th, 1910, and as the time and place of its occurrence are known to Lt.-Colonel Nurse, there is a reasonable hope that he will be able to find the insect in numbers.

The species was originally described in the *Trans. Ent. Soc. Lond.*, 1894, p. 565, pl. xiii., from dried examples taken by Dr. Fr. Ris at Oerlikon, near Zürich, in April and May, 1889. Any hesitation about the validity of the species was dispelled by Dr. Ris, who made a preparation of the genitalia of the male type for his figures in his paper, "Die schweizerischen Arten der Perliden-Gattung *Nemura*" (*Mitt. schweiz. entom. Gessellschaft*, Bd. 10, Heft 9), and proved the species to be very distinct. It remained otherwise unknown until a male and a female were recorded by Petersen from near Randers, in Denmark ('*Danmarks Fauna, Pseudoneuropteren*'; Copenhagen, 1910).